

**Zonal structure and meridional drift
of large-scale solar magnetic fields**

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Digitized synoptic charts of the photospheric magnetic fields have been analyzed for the past 3 solar activity cycles (1969-1996). The zonal structure and cyclic evolution of large-scale solar magnetic fields were investigated using the calculated values of the radial, meridional, and azimuthal components of the solar magnetic field averaged over one Carrington rotation (CR). The time-latitude diagrams of all 6 parameters and their correlation analysis clearly revealed a zonal structure, two type of poleward meridional drift and variations of large-scale magnetic fields with quasi periods of 2-3 and 5-5.5 years. It is concluded that on the Sun we observe two different processes of the organization and redistribution of the magnetic fields, which are related to the magnetic field generation and their following redistribution in the process of emergence from the field generation region to the solar surface. It is supposed that this redistribution is caused by some external forces (presumably, by giant and supergiant convection in the convection zone).